

CASE REPORT

Integrating EMDR into an evolutionary-based therapy for depression: a case study

Valery Krupnik

Mental Health Department, Naval Hospital Camp Pendleton, Vandergrift Blvd, Camp Pendleton, California 92025, USA

Correspondence

Valery Krupnik, Mental Health Department, Naval Hospital Camp Pendleton, Vandergrift Blvd, Camp Pendleton, CA, 92025, USA. Tel: +818-448-8966; E-mail: valery.krupnik.ctr@med.navy.mil

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Theoretical and Research Basis for Treatment

Specificity and universality in psychotherapy

The dialectic between specificity and universality has been ubiquitous in medicine. In psychotherapy, this dialectic has historically been skewed toward universality. Initially, psycho-social interventions were not designed for specific disorders but rather targeted symptoms or psychological problems. Psychoanalysis, for example, was originally designed to treat neuroses [1], while behavioral therapies targeted maladaptive information processing and resulting behaviors [2]. Mental disorders, however, are commonly viewed and classified as symptom constellations [3], hence by design psychotherapies were not specific to mental disorders. Moreover, the general trend among more recently developed therapies has been toward universality rather than specificity. The most studied therapy, Cognitive Behavioral (CBT), was initially developed for depressive disorders but has since been used for a number of mental and psycho-somatic conditions. Its low specificity (or high universality) has been highlighted in several reviews [4–8]. These reviews reflect on the low specificity of other therapies as well. Another major therapy, EMDR (eye movement

Key Clinical Message

We present an intervention in a case of major depression, where eye movement desensitization and reprocessing (EMDR) therapy was integrated into an evolutionary-based psychotherapy for depression. At the end of the treatment and at follow up assessment we observed a more accepting disposition and decreased depressive but not anxiety symptoms.

Keywords

Depression, EMDR, evolution, specificity, TDD.

desensitization and reprocessing) was initially developed for traumatic disorders [9, 10] but has also been used for a variety of afflictions including affective, personality, addiction, eating disorders, and migraines [11–14].

Universality of a tool may become a tradeoff against its effectiveness. Lack of disorder-treatment specificity has been suggested as one of the factors limiting the success in treating depression, and a new “choose horses for courses” paradigm has been advocated [5, 15, 16]. Although CBT is widely accepted as a therapy of choice for depression, the authors point out that neither theoretical considerations nor empirical data indicate that CBT is equally effective or superior to other interventions for all depressive disorders [16]. They suggest choosing an approach specific to the nature of a depressive disorder, differentiating between psychotic, melancholic, secondary depression, and dysthymia. Similarly, a new self-system therapy for depression is differentially applied to patients according to their level of anxiety symptoms [17]. Still, the science of specificity of psychotherapy is considered to be in its infancy [18, 19].

Evolutionary theory in treating depression

The number of interventions for depressive disorders has lately grown in diversity and sophistication [20], but there

seems to be no obvious champion among them [7, 21], and major depressive disorder remains one of the most widespread and yet one of the hardest to treat mental disorders. More than 20% of cases do not respond to conventional treatments [22–24].

If low specificity is a limiting factor, then increasing it has a potential of improving the efficacy. High specificity can be achieved either empirically by trying different approaches until one proves a better fit than the others or by using available heuristics to custom-design a specific treatment, e.g. self-system therapy for depression [25] was developed based on regulatory focus theory [26].

Evolutionary theory of depression considers it a systemic adaptive response to insurmountable adversity, to which the organism responds with physiological, hedonic, and behavioral withdrawal (for reviews see [27–30]). An evolutionary theory-based intervention is likely to be specific to depression, because the theory defines it as a distinct psycho-physiological process.

Recently, two evolutionary-based therapies for depression have been suggested [31]; [32]. Despite the similar theoretical basis the suggested interventions are significantly different. In their evolutionary-driven cognitive therapy (ED-CT) Giosan *et al.* identify threats to the patient's fitness and target them with cognitive-behavioral methods. The main components of their approach are (1) cognitive restructuring targeting the mismatch between evolutionary-driven beliefs about the requirements for one's fitness and a more adaptive reality-based understanding of one's opportunities and limitations, and (2) behavioral activation targeting the fitness-compromising behaviors [31]. Krupnik's treating depression downhill (TDD) therapy relies heavily on experiential approach. In its initial phases it seeks to facilitate the depressive response by helping it "bottom out" through the experience of acceptance rather than to target cognitive biases [32]. In that it follows the contention that transition from protest to despair is the function of depressive response [33]. The behavioral activation phase of TDD also differs from ED-CT. It does not target specific maladaptive behaviors but instead attempts to nonspecifically activate motivation through the experience of pleasure by engaging in pleasurable activities.

TDD comprises three phases: exploration, acceptance, and behavioral activation [32]. In its initial two phases, it targets core psychological mechanisms believed to underlie depression, i.e. loss and defeat [30, 34–37], in order to help the transition from protest to acceptance. Acceptance phase of TDD relies on practice of mindfulness to meet its objective. Not everyone, however, is either willing or capable of practicing mindfulness in their depressed state, which is why mindfulness as a psychosocial intervention was recommended for stress management and symptom relapse prevention rather than for active depression [38].

Therefore, we tried to find an alternative intervention to use within TDD frame to make it more widely applicable, while preserving its specificity.

EMDR application to depressive disorders has mostly been reported in clinical case studies, where it followed the standard protocol and demonstrated effectiveness in alleviating depressive symptoms [39–42]. In a recent randomized controlled trial, EMDR was used as an adjunctive therapy to CBT for treating depression. EMDR sessions added to a course of CBT showed additional therapeutic gains [43]. That study used the standard EMDR protocol as well.

Herein, we describe a treatment, where the mindfulness module of TDD was substituted for EMDR (TDD-EMDR hereafter). We presumed that because of the experiential nature of the acceptance phase, EMDR, being an experiential therapy itself [10], should be a good fit. The strategy for integrating EMDR with TDD (integrative therapies themselves) followed the evolutionary basis of TDD, which was developed as a specific therapy for depression based on its evolutionary theory. That strategy determined the modifications made to the standard EMDR protocol, as described in this report.

Case Formulation

"Charles" is a 27 year-old divorced man of Native American heritage and a service member of the military force. He presented to a mental health clinic at his duty station voluntarily, following decline of his work performance. At the time he had about a year left in service, completing his eight year-career. Charles had two children from a dissolved marriage. He deployed to a war zone once five years prior to the current treatment episode. Charles had previous episodes of mental health treatment.

Charles presented with complaints of insomnia averaging, per his report, two-three hours a night, fluctuating appetite, skipping meals and eating little some days, while overeating on others, depressed mood every day, poor concentration, loss of interest, motivation, and pleasure, feeling worthless, fatigue, and low libido. Charles stated that he had experienced some of these symptoms since four years ago, after he married, but they escalated in the last month to the point where he was punished for chronic tardiness at work. Charles also complained of feeling helpless and seeing no way out of his current situation. The immediate contributing stressors were separation from his girlfriend, who was in another state, and problems at work. Charles wanted to complete his military contract but doubted his ability to do it.

Charles' depressed mood and helplessness were evident in his appearance and cognitive style. He also reported increased general anxiety. The symptom constellation and

duration met the diagnostic criteria of mild major depressive disorder, single episode [44]. The main chronic stressors were a failing romantic relationship and his adoptive father's grave illness. In a semistructured interview, Charles also endorsed all seven traits of avoidant personality disorder [44] that have endured since his adolescence. In addition, he was earlier diagnosed with ADHD. Both Charles' biological parents suffered from substance abuse, and his mother allegedly suffered from a bipolar disorder. His sister was diagnosed with ADHD as well. Charles reported previous episodes of depression that started in his early childhood; it was, however, unclear whether they reached the threshold of major depression to establish with certainty a diagnosis of recurrent major depression.

Charles had prior episodes of mental health care. He went to counseling while in foster care, which discontinued upon his adoption at the age of eight. Charles' first adult episode of mental health care happened during his military service seven years prior to the current one. He was successfully treated for alcohol dependence in a two-month intensive outpatient program, where he received no medications. Four years prior to the current treatment episode Charles was treated for combat-related PTSD. He received a course of EMDR therapy and no medications. His symptoms remitted, so that he no longer met the criteria of PTSD.

The next treatment episode started five months prior to the current one. During those five months Charles was treated for major depression as an outpatient, including a two-month intensive outpatient program. He was tried on Prozac 20 mg (a short trial due to poor tolerance), Wellbutrin 200 mg, and Cymbalta 30 mg. That treatment failed to resolve Charles' depressive symptoms, and he started the current treatment episode consisting of continuing medication management and a therapy described in this report. Given the duration of the treatment and trials of two anti-depressants Charles' depression might be considered refractory.

Despite the complex diagnostic picture the depressive symptoms were most prominent. They constituted the bulk of Charles' complaints, caused most suffering, and therefore were the target of his therapy.

Assessment

The diagnosis of major depressive disorder was established through clinical interviews as part of routine care by three clinicians: two psychiatrists and a social worker. It was established according to DSM-IV [44], since the treatment occurred before the publication of DSM-5 [3].

Five self-report psychometric measures were used to monitor the dynamics of the patient's mental condition. Beck's anxiety and depression inventories (BAI and BDI-II

respectively) were used to follow the levels of anxiety and depressive symptoms, while PANAS (positive and negative affect scales) were used to assess the balance of affect, and the "ladder of life" – to estimate general life satisfaction. We also used the trait scale of State and Trait Anxiety Inventory (STAI) to measure stable traits of anxiety.

BDI-II [45] is a self-report multiple choice questionnaire consisting of 21 items representing different symptoms of depression rated by severity from 0 to 3. It was shown to have high test-retest reliability ($r = 0.93$) and internal consistency ($\alpha = 0.91$). BAI [46] is also a self-report 21-item scale rated from 0 to 3 by severity of anxiety symptoms. Its test-retest reliability $r = 0.75$ and internal consistency $\alpha = 0.92$. Both scales are scored by adding the scores for individual items, thus yielding an overall symptom severity value.

The short 20-item self-report PANAS scale [47] consists of 10 positive and 10 negative affects rated by intensity from 1 to 5 and from -1 to -5, respectively. The overall balance of affect is calculated by adding the individual items' scores. The reported test-retest reliability for the positive and negative subscales $r = 0.68$ and 0.71 , respectively; the reported internal consistencies for positive and negative subscales $\alpha = 0.88$ and 0.87 , respectively.

State and Trait Anxiety Inventory is a measure of trait and state anxiety that has 20 items for assessing trait anxiety and 20 for state anxiety [48]. For the trait scale, test-retest reliability ranged from $r = 0.65$ to 0.86 [48] and internal consistency for psychiatric outpatients $\alpha = 0.92$ [49].

Cantril's ladder of life [50] is a single-item 11-point Likert scale, asking responders to rate their current life from the worst to the best possible. It has test-retest reliability $r = 0.54$ [51] and a validity coefficient of 0.59 [52].

Procedure

After establishing and discussing the diagnosis, we introduced and explained the combined TDD-EMDR therapy, and the patient gave his consent to proceed with the treatment. He was assessed at five time-points, as shown in Table 1.

Course of Treatment

Throughout therapy Charles was taking Effexor 225 mg, Ambien 5 mg, and Adderall 10 mg. The treatment followed the following format: 12 sessions of active therapy, 4 "maintenance" sessions, and follow-up assessments in 3 and 6 months.

The first three sessions were exploratory. During that time the main depressogenic themes were identified as abandonment, rejection, and shame. Charles felt abandoned

Table 1. Scores for the self-report measures.

	BDI-II	BAI	STAI	PANAS	Ladder of life
Intake	42	19	58	2	6
Sixth session	32	32	62	-2	6
Twelfth session	12	32	53	1	6
Three month follow-up	12	30	55	1	6
Six month follow-up	18	30	55	1	4

BDI-II, BAI – Beck's depression and anxiety inventories, respectively; STAI, state and trait anxiety inventory; PANAS, positive and negative affect scales, Ladder of Life - Cantril's ladder of life satisfaction scale.

by his mother as a child and by his ex-wife, who broke off their relationship while he was deployed. He admitted to harboring a deep sense of shame and rejection that he realized had been set off by having been abandoned and neglected as a child. That sense was reinforced, as Charles went through several foster homes before his adoption. In addition, Charles felt ashamed for an emotional meltdown he had had five years ago during his deployment because of the fear of being killed. In the exploration phase, Charles' girlfriend, who at the time was in his home state, broke up with him, reinforcing his sense of rejection, loss, and failure.

The above events were conceptualized as instances of Charles' loss and defeat that were beyond his control. The recent breakup of his romantic relationship was identified as especially painful and overwhelming, and was chosen as the primary target of the next (acceptance) phase.

The acceptance phase utilized EMDR interventions similarly to the desensitization phases (3–8) of the standard EMDR protocol [10]. Charles was asked to focus on the thought of his girlfriend, the sense of loss and defeat, and the feelings and visceral sensations those thoughts evoked. He was asked to rate his distress on a 0/10 scale of subjective units of disturbance (SUDS). He then was directed to make about 20 saccadic eye movements and then share his thoughts and feelings. This procedure was repeated through the session's end. At the session's end SUDS were taken again. A notable difference from the standard EMDR protocol was that no positive-negative cognitive frame was established, on the contrary, Charles' cognitions were assigned no value. The role of the therapist was to reflect on the stream of the patient's thoughts, facilitating his acceptance of irreversibility of the loss/defeat. The therapist would intervene by reframing the elicited thoughts along the axis of protest-acceptance. At an appropriate time the therapist would ask such questions as, "Is there anything you can do? Do you believe you can change that? Do you think you can control another person's wish? What is there for you to do?"

Interestingly, a conflict between protest and acceptance transpired fairly quickly in the first EMDR session. Over

the course of that session Charles stated, "I still love her... I don't want to be alone... I don't want to want to be with her anymore... I think too much." As EMDR proceeded, this conflict was reiterated in the following sessions, "I feel lonely... I'm missing her... I know I can be happy... It makes sense – there's nothing I can do... I just want to move on and make friends... I remember how good it was [when they were together]." A turning point came in the fourth session, where Charles said, "I don't want to do this EMDR. I feel it will make me give up and stop caring about her," and later in the session, "I have no control. Things will just work out the way they do." In that session, his SUDS dropped to the 0 point for the first time (from 7). Before that they would usually go down half-way, e.g. 10 to 5 or 8 to 4.

By session 5 of the acceptance phase Charles reported improved mood, and decreased rumination about his girlfriend, "I'm getting over her. I'm not about to cry when I'm thinking of her." The focus of Charles' thoughts shifted toward his internal state, "There's something wrong with me... I don't belong anywhere... I'm not the same as I used to be." He also started expressing more active disposition, "I need to start taking control. It's been enough time." After that session, Charles was encouraged to start behavioral activation by making a list of easily accessible pleasurable activities and executing them on a daily basis. The list included an outdoor workout, short trips out of town and to the beach, going out to eat his favorite meals, as well as increased social activities such as spending more time with his friends, increasing "live" telephone communication with his sister as opposed to texting or Facebook communication.

In the next four sessions, the focus of EMDR processing shifted to the earlier events: Charles' shame about the meltdown during his deployment and the loss of his marriage. In one of the sessions, the theme of his girlfriend re-occurred and was re-processed. By the ninth EMDR session (total of twelve) Charles reported significant decrease in depressive symptoms (Table 1) and increased social activity. He also started a new romantic relationship. Charles' measures of anxiety remained either at the initial level (STAI) or increased (BAI), while his balance of affect remained close to the initial level. After twelve sessions Charles was seen for four more "maintenance" sessions that were unstructured.

Treatment Outcome

Three months after the end of the therapy, at his first follow-up assessment, Charles reported no significant change in his condition. His psychometric measures remained mostly at the post-treatment levels (Table 1). Noteworthy, his symptoms of depression stayed stable despite multiple

recent stressors: his new romantic engagement ended, resulting in increased financial stress, his father's health condition took a turn for the worse.

Last time Charles was seen at the six month follow-up assessment. By that time his father died, Charles was romantically involved with another woman, who got imprisoned, and he was close to the end of his service, transitioning to civilian life. Despite this string of adverse life-events his symptoms mostly stayed at the post-treatment levels (Table 1). He presented as generally optimistic, looking forward to the next phase of his life.

A year later, Charles made an incidental casual contact with his therapist, where he apprised the therapist of his current situation. He was in college and in a stable relationship. He was taking Wellbutrin 100 mg as a dual purpose medication to help his concentration and as an antidepressant. Charles stated that he was feeling significantly better.

The main limitation of this case and the difficulty of interpreting its outcome is that the patient was medicated during the therapy. It has to be noted, however, that his antidepressant therapy started five months prior to his psychotherapy, and did not appear to have significantly benefited Charles, since his symptoms of depression were in the severe range at the start of TDD-EMDR treatment (BDI-II = 42, Table 1). Taking this into account, it appears likely that the observed change was at least in part due to the psychotherapy. In sum, TDD-EMDR showed promising results in decreasing depressive symptoms (Table 1), and themes of acceptance emerged readily during EMDR processing.

Discussion

Differential effects of TDD-EMDR on depressive and anxiety symptoms

In the presented case, depressive symptoms show a consistent downward trend, while other measures, including measures of anxiety, demonstrate no such consistency (Table 1). That may indicate TDD-EMDR's specificity for depression, which was the rationale for developing TDD. Therefore, it appears that in using this therapy much consideration should be given to whether a particular case is primarily driven by depressive response.

Differential response of anxiety and depressive symptoms to TDD was noted and addressed previously [32]. It is especially interesting and important in light of high comorbidity of depression and anxiety disorders [53]. Along with others [17, 26, 54] we believe that depressive and anxiety responses to stress may represent different adaptive strategies. To our knowledge, there is no reliable measure to determine whether in a co-morbid condition

the pathology is primarily driven by depressive or anxiety response, which leaves this quandary and consequently a choice of therapy to therapist's clinical impression and judgment.

Modification of the standard EMDR protocol in TDD-EMDR

Our application of EMDR differed from its standard protocol [10] in several aspects: (1) EMDR was used in a truncated form (phases 3–8), (2) The nature of the targets was different in that we emphasized the sense of loss/defeat over the actual events, (3) we did not attempt reappraisal along the standard positive-negative cognitive axis [10] but instead set up the cognitive frame along the protest-acceptance axis, working toward acceptance, (4) we used "talk" interventions during EMDR processing more liberally than we would in trauma-focused EMDR.

Conflict of Interest

None declared.

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